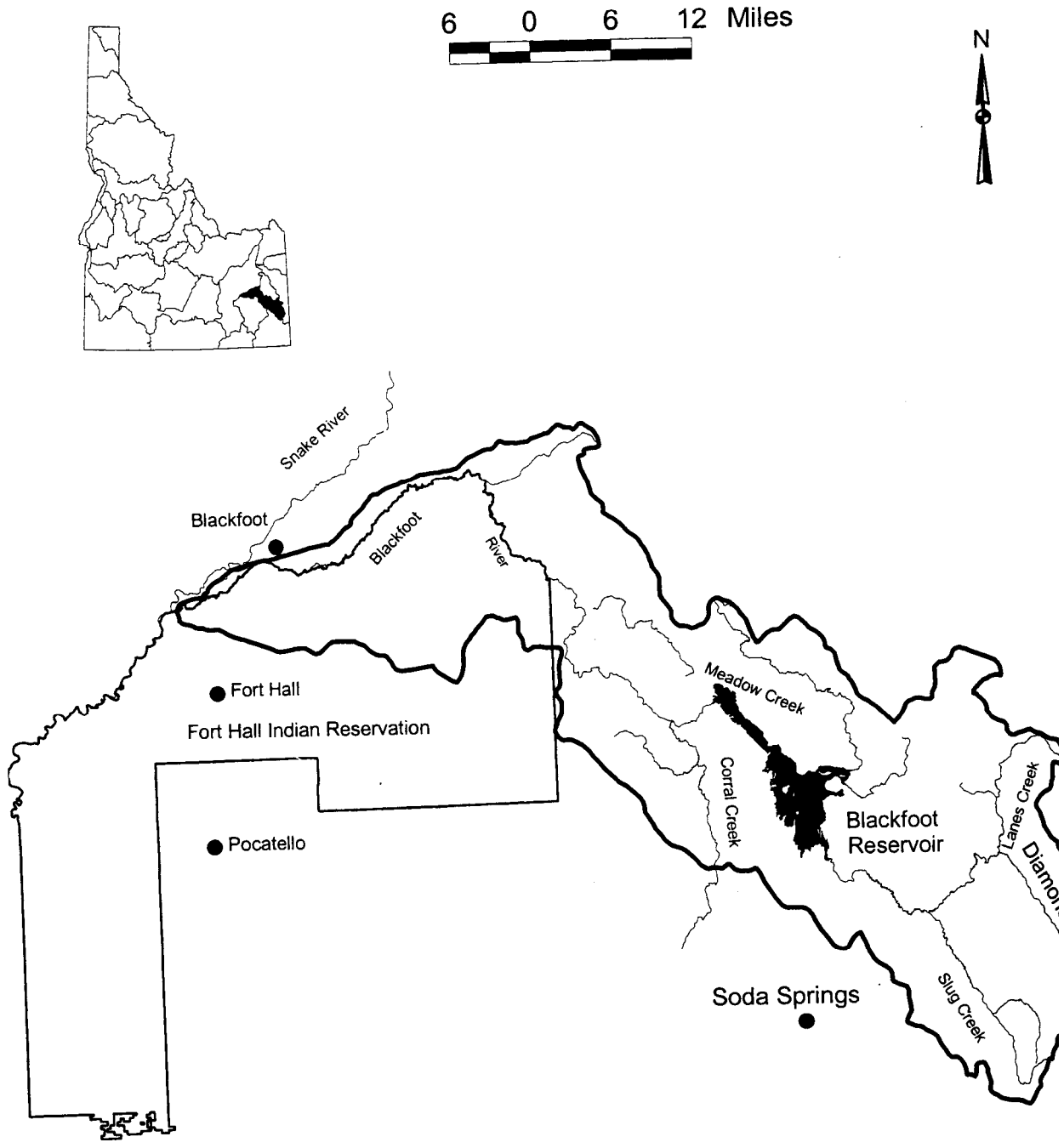
Blackfoot River Drainage



27. BLACKFOOT RIVER AND TRIBUTARIES

A. Overview

The Blackfoot River and tributaries total 346 miles covering 734 surface acres. Blackfoot Reservoir covers 19,000 surface acres and contains 350,000 acre-feet of water at capacity. The Blackfoot River is the reservoir's major tributary and has a mean annual flow of 168 cfs. The river upstream from the reservoir extends 35 miles to its origin at the confluence of Lane and Diamond creeks.

Habitat conditions generally are fair in the upper river and tributaries, with a few exceptions due to livestock grazing and irrigation diversions. One of the largest phosphate ore reserves in the United States is located in this drainage. Environmental problems associated with phosphate mining have been minimal to date. However, there is an on-going investigation into affects of selenium from mines on the fish and wildlife in the upper Blackfoot River drainage.

Most large (over 18-inches long) trout caught downstream from Blackfoot Reservoir probably escaped from the reservoir. Good rearing conditions in tributaries and reduced limits for cutthroat trout have allowed cutthroat trout numbers to increase in the lower river above Wolverine Creek. Mountain whitefish are the dominant gamefish species in the river downstream from Wolverine Creek. Department personnel will encourage the Shoshone-Bannock Tribes to obtain minimum flows for the river during the non-irrigation season. However, increased flows are unlikely in years when the Blackfoot Reservoir is low. After an extended drought such as occurred between 1987 and 1992, at least two consecutive years of above normal precipitation are required to refill Blackfoot Reservoir.

Trout harvest from Blackfoot Reservoir is almost entirely hatchery rainbow trout. Wild cutthroat trout must be released, and hatchery cutthroat trout have not been stocked since 1995. Wild cutthroat trout made up about 90% of the catch from the river and tributaries upstream from Slug Creek. However, feral rainbow trout are pioneering into the upper Blackfoot River at an alarming rate.

The Blackfoot River, its tributaries, and the Blackfoot Reservoir serve integral roles in the life history and ecology of wild cutthroat trout. Mature cutthroat trout from the reservoir ascend the river in April and May and enter upper tributaries or the main river channel to spawn in late May and June. Most of the progeny rear in the tributaries for varying periods up to two years. Most juvenile cutthroat trout then return to Blackfoot Reservoir until they are ready to return to the river to spawn.

Studies completed on the reservoir and river in the 1970s and 1980s indicated that the wild cutthroat trout population was being over exploited. Size and number of cutthroat trout caught had decreased significantly prior to 1985. Regulations to offset this decline were implemented in 1985 but were ineffective. An evaluation of the cutthroat trout population made in 1988 showed that the river fishery had completely collapsed.

In 1983, the Department began stocking Bear Lake cutthroat trout in Blackfoot Reservoir. These fish were reared for one year in the Grace Hatchery prior to release as five-inch fingerlings. Bear Lake cutthroat trout were treated with morphaline at the hatchery prior to release, and were planted in the Little Blackfoot River at its mouth. The stream also was treated with morphaline to attract fish at the time of spawning. This planting location and morphaline treatment was an attempt to maintain the separate strains of cutthroat trout. Egg survival from Bear Lake cutthroat trout spawners captured in the Little Blackfoot River was poor. Beginning in 1990 the Bear Lake cutthroat trout were released in the Blackfoot River. Beginning in 1991 the Department attempted to trap all trout ascending the upper Blackfoot River from Blackfoot Reservoir. All trout, except native Yellowstone cutthroat trout, were to be removed from the river to prevent them from spawning and possibly interbreeding with wild cutthroat trout. This program failed since the trap was not effective except during low flows. At high flows the weir was over topped by water and all fish passed.

A major management planning effort was initiated in 1988 for the entire Upper Blackfoot System. Since 1990 all wild cutthroat trout caught in the reservoir have had to be released. From 1990 through 1997 only two cutthroat trout over 18 inches could be taken per day on the river. Since 1998 all cutthroat trout have had to be released on the upper Blackfoot River and tributaries. From 1990 through 1997, anglers could keep two cutthroat daily, but only those at least 18-inches long. No bait fishing is allowed on the river upstream from the reservoir. Computer modeling to simulate the wild trout population indicated that 12 to 15 years would be necessary under these regulations before the wild cutthroat trout fishery could be restored to 1959-60 levels. The 1987-1992 drought got this program off to a slow start. As of the year 2000 restoration appears good with large numbers of spawners observed on spawning grounds and upper river anglers reporting good catches of large cutthroat trout.

The management plan also deals with hatchery programs for the reservoir. Originally the Department was going to stock Bear Lake cutthroat trout and rainbow trout. The Department discontinued the Bear Lake cutthroat trout program because there was a chance these fish would escape to the upper river and interbreed with native Yellowstone cutthroat trout. In 2000, anglers and Department biologists observed numerous rainbow trout in the upper reach of the Blackfoot River. During the current five-year planning period, the Department will work toward removing this new vain on trout population. The Department's new sterile rainbow trout stocking program is the first measure for this effort.

Hatchery rainbow trout were typically stocked in spring and summer at 80,000 per year, but the emphasis during the early 1990s was on fingerling stocking. The target release was 2,000,000 rainbow trout annually. However, during the extended drought in 1991, an evaluation demonstrated very poor survival of these fish, with almost no benefit to anglers. With increased precipitation from 1995 through 1999 the Department again planted large numbers of fingerlings as well as an equal dollar value of catchable size rainbow trout. In 2001, the Department will evaluate the relative benefits of these two size groups of trout to the anger's catch. Size of trout to be stocked in the future will be based on this evaluation.

Dike Lake (35 surface acres) was created by a barrier across the mouth of the bay on Blackfoot Reservoir to prevent water loss. Dike Lake is extremely productive and known for rapid growth rates of stocked trout. During the winter months, vegetation in the water decays, resulting in oxygen depletion and in most years, a complete fish kill. The Department tried electric aerators but these were damaged when power outages allowed moving parts to freeze. During the next five years the Department will attempt to control aquatic weed growth as a means of reducing oxygen demand and subsequent fish kill during winter.

B. Objectives and Programs

1. Objective: Improve migration conditions in spawning tributaries in the Blackfoot River from its mouth upriver to Blackfoot Reservoir.

   Program: Repair potential migration barrier on Miner Creek below the highway bridge.

2. Objective: Stock rainbow trout in Blackfoot Reservoir of a size that has the best return to anglers.

   Program: Conduct season-long creel survey to compare the relative return to anglers of a large number of small fingerlings (3-inches) and a small number of large catchables (9- to 10-inch). Use the results to update the stocking program for Blackfoot Reservoir.

3. Objective: Protect genetic integrity of wild Yellowstone cutthroat trout in the Upper Blackfoot River.

   Program: Remove harvest limits for rainbow trout and hybrids if anglers can differentiate between these fish and native cutthroat trout.

   Program: Install a trap and weir near the reservoir to prohibit existing rainbow trout from migrating up from the reservoir to spawn in the river.

   Program: Stock only sterile rainbow trout in Blackfoot Reservoir.

   Program: Install signs to help anglers distinguish among rainbow trout, cutthroat trout and their hybrids.

   Program: Install traps below significant spawning areas on important spawning tributaries so that rainbow trout and hybrid spawners can be culled.

4. Objective: Maintain sufficient oxygen and decrease anaerobic gasses so that trout can live through the winter under ice-cover in Dike Lake (a diked-off arm of Blackfoot Reservoir.

   Program: Apply herbicide to reduce growth of aquatic macrophytes throughout the growing season.

Drainage: BLACKFOOT RIVER

Water	Miles/acre	Fishery			
		Type	Species Present	Management	
Blackfoot River from mouth to equalizing reservoir	14/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	General Quality	Survey fish popu potential hatcher
Blackfoot River from equalizing reservoir to Wolverine Creek	18/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	General Quality	
Blackfoot River from Wolverine Creek to Rawlins Creek	14/	Coldwater	Rainbow trout Mountain whitefish Cutthroat trout	General Quality	Assess potential Improve fish pas
Rawlins and Brush creeks (lower three miles)	3/	Coldwater	Rainbow trout Brook trout Cutthroat trout	Put-and-take trout General Wild trout	Stock hatchery z
Rawlins and Brush creeks (above hatchery zone)	9/	Coldwater	Cutthroat trout Brook trout	Wild trout General	
Blackfoot River from Rawlins Creek to Cutthroat trout Campground	11/	Coldwater	Rainbow trout Cutthroat trout	General Quality	
Blackfoot River from Cutthroat trout Campground to Government Dam	10/	Coldwater	Rainbow trout Cutthroat trout	Put-and-take trout Quality	
Corral Creek		Coldwater	Rainbow trout Brook trout Cutthroat trout	Put-and-take trout General Wild trout	
Other Blackfoot River tributaries from mouth to Government Dam		Coldwater	Cutthroat trout	Wild trout	
Blackfoot Reservoir	/18,000	Coldwater	Rainbow trout Yellowstone cutthroat trout trout	Put-and-grow trout Conservation	Evaluate benefit Stock sterile rain
Dike Lake	/35	Coldwater	Rainbow trout	Put-and-take trout	Attempt aquatic l vegetation that le
Blackfoot River and tributaries above the reservoir	60/	Coldwater	Rainbow trout Brook trout Cutthroat trout	 Quality	Develop angler a particularly on up trout hybrids.